

METHOD AND APPARATUS FOR DYNAMICALLY CONTROLLING DATA FLOW ON A BI-
DIRECTIONAL DATA BUS

ABSTRACT

Disclosed herein is a method and apparatus for dynamically
controlling data flow on a bi-directional data bus. Windows of time
5 on the bus are divided between input, output, and pointer
transactions. The number of input transactions relative to the
number of output transactions is dynamically determined as a function
of an input/output bias factor. Input transactions are written to a
plurality of input queues (IQs) over the bus, and output transactions
10 are read from a plurality of output queues (OQs) over the bus. The
IQ receiving an input transaction is selected at least in part
according to the occupancies of the IQs relative to a threshold
occupancy. The number of output transactions allocated to an OQ
during a window is determined as a function of that OQ's occupancy.
15 Pointer transactions comprise reading or writing two copies of the
pertinent pointers to prevent pointer corruption resulting from
simultaneous pointer read/write accesses.